

**REMARKS**

Applicants appreciate the Examiner's thorough consideration provided the present application. Claims 1, 2, 4-10, and 12-16 are now present in the application. Claims 1 and 9 are independent. Claims 15 and 16 have been added. Claims 1, 2, 9, 10 and 14 have been amended. Reconsideration of this application, as amended, is respectfully requested.

***Drawings***

Applicants have still not received a Notice of Draftsperson's Patent Drawing Review PTO-948 or other indication of whether or not the formal drawings have been approved by the Draftsperson. Since no objection has been received, Applicants assume that the drawings are acceptable and that no further action is necessary. Confirmation thereof in the next Office Action is respectfully requested.

***Claim Rejections Under 35 U.S.C. § 103***

Claims 1, 2 and 4-8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,331,884 to Masazumi et al. (Masazumi) in view of Gyoda and Hashimoto, and claims 9, 10 and 12-14 stand rejected over Gyoda in view of Masazumi and Hashimoto. These rejections are respectfully traversed.

Complete discussions of the Examiner's rejections are set forth in the Office Action, and are not being repeated here.

In light of the foregoing amendments to the claims, Applicants respectfully submit that these rejections have been obviated and/or rendered moot. While not conceding to the appropriateness of the Examiner's rejection, but merely to expedite prosecution, as the Examiner will note, independent claim 1 has been amended to recite a combination of steps in a method of forming a liquid crystal layer including depositing the liquid crystal material emitted simultaneously from the plurality of orifices uniformly onto the substrate.

Independent claim 9 has been similarly amended to recite a combination of elements in an apparatus for forming a liquid crystal layer, including a stage for moving the substrate in one direction during continuously emitting of the liquid crystal material simultaneously from the projecting portion uniformly onto the substrate during the movement of the substrate.

Applicants respectfully submit that the combinations of steps and elements as set forth in amended independent claims 1 and 9 respectively, are not disclosed or suggested by the prior art of record, including Masazumi, Gyoda and Hashimoto.

**Masazumi**

Masazumi discloses that droplets of liquid crystal materials 9a, 9a' and 9a" are successively (not simultaneously) applied to certain portions from nozzles N2, N3 and N4 of liquid crystal reservoirs S2, S3 and S4, respectively and that mixing of one droplet with another droplet is prevented (see Masazumi, Col. 16, lines 31-40 and Figs. 5, 6(A) and 6(B)). Therefore, it appears plainly that the orifices of the

nozzles of Masazumi do not emit materials simultaneously.

**Gyoda**

Gyoda teaches a single ink-jet nozzle 50, which applies droplets of a liquid crystal (one droplet at a time) over an area of a substrate. Gyoda provides that "it suffices to apply one drop 61 or several drops 61 at localized points" (see Gyoda, paragraph [111] and Fig.7). Therefore, the device of Gyoda does not emit liquid crystal material from several nozzles simultaneously. Rather Gyoda delivers an amount of material from the same nozzle (drop by drop).

**Hashimoto**

Hashimoto teaches a method wherein a liquid crystal composition is applied to a substrate using a variety of specified methods (excluding a plurality of orifices), and then spread out to achieve uniformity (see Abstract of Hashimoto and Col. 5, lines 7-13). Clearly, Hashimoto does not deposit liquid crystal material emitted simultaneously from a plurality of orifices uniformly onto a substrate. Rather, the method of Hashimoto requires spreading of the liquid crystal material (after the deposition step) to achieve uniformity (uniformity is not achieved during movement of a substrate). Further, only one orifice is disclosed in Hashimoto.

In view of the discussion provided above, the combined references (Masazumi, Gyoda and Hashimoto) fail to teach all of the elements of the Applicants' claims. In addition, uniform deposition is not achieved in any of the

references of record. Therefore, a combination of Masazumi, Gyoda and Hashimoto would not produce the Applicants' invention as recited in independent claims 1 and 9 (as amended). Further, the structures of the devices disclosed in these references are diverse from one another, and any combinations would likely render these devices inoperable for their intended purpose. Any motivation to combine would only be derived from hindsight reasoning. Thus, one of ordinary skill in the art would not find motivation or suggestion to combine these references as stated by the Examiner. Reconsideration and withdrawal of these art grounds of rejection is respectfully requested.

In addition, claims 2, 4-8, 10 and 12-14 depend, either directly or indirectly, from independent claims 1 and 9, and are therefore allowable based on their respective dependence from independent claims 1 and 9, which are believed to be allowable. Allowance of claims 2, 4-8, 10 and 12-14 is respectfully requested.

### ***Claims 15 and 16***

Claims 15 and 16 have been added for the Examiner's consideration. Applicants submit that claims 15 and 16 depend, either directly or indirectly, from independent claims 1 and 9, and are therefore allowable based on their dependence from claims 1 and 9, which are believed to be allowable. Allowance thereof is respectfully requested.

### **Conclusion**

All the stated grounds of rejection have been properly traversed and/or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently pending rejections and that they be withdrawn.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

In the event there are any matters remaining in this application, the Examiner is invited to contact Percy L. Square, Registration No. 51,084 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By *James T. Eller, Jr.* #40,953  
James T. Eller, Jr.  
Reg. No. 39,538  
P. O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000

JTE/PLS:jls/ags